AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (previously presented) A method of computer-based simulation of a cooling system, comprising:

inputting condenser parameters, evaporator parameters and compressor parameters for said cooling system;

processing said condenser parameters, said evaporator parameters and said compressor parameters through a model of said cooling system; and

selecting a flow control device based on an output of said model.

2. (previously presented) The method of claim 1 wherein said flow control device includes one of a capillary tube device and an orifice device.

3. (previously presented) The method of claim 1 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

4. (previously presented) The method of claim 1 wherein said step of selecting a flow control device includes generating a list of available flow control devices based on said output and selecting said flow control device from said list of available flow control devices.

5. (previously presented) The method of claim 1 further comprising inputting properties for a refrigerant flowing through said cooling system, wherein said output is further based on said refrigerant properties.

6. (previously presented) The method of claim 5 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

7. (previously presented) The method of claim 1 wherein said step of inputting condenser parameters includes generating a list of available condensers, selecting a condenser from said list of available condensers and automatically inputting said condenser parameters based on said selected condenser.

8. (previously presented) The method of claim 1 wherein said step of inputting compressor parameters includes generating a list of available compressors based on search parameters, selecting a compressor from said list of available compressors and automatically inputting said compressor parameters based on said selected compressor.

9. (previously presented) The method of claim 8 wherein said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity.

10. (previously presented) The method of claim 8 wherein said search parameters include a capacity and a capacity tolerance.

11. (previously presented) The method of claim 1 further comprising inputting tubing and line heat transfer parameters, wherein said output is further based on said tubing and line heat transfer parameters.

12. (previously presented) The method of claim 1 further comprising inputting accumulator parameters, wherein said output is further based on said accumulator parameters.

13. (previously presented) The method of claim 1 wherein said condenser parameters and said compressor parameters are input as air-cooled condensing unit parameters.

14. (previously presented) The method of claim 13 further comprising generating a list of available air-cooled condensing units, selecting an air-cooled condensing unit from said list of available air-cooled condensing units and automatically inputting said air-cooled condensing unit parameters based on said selected air-cooled condensing unit.

15. (cancelled)

16. (previously presented) The method of claim 43 further comprising generating a list of available condensing units, selecting a condensing unit from said list of available condensing units and automatically inputting said condensing unit parameters based on said selected condensing unit.

17. (previously presented) The method of claim 43 wherein said condensing unit parameters include compressor parameters and condenser parameters.

18. (previously presented) The method of claim 43 further comprising selecting a flow control device for said cooling system based on said system outputs.

19. (previously presented) The method of claim 18 wherein said flow control device includes one of a capillary tube device and an orifice device.

20. (previously presented) The method of claim 18 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

21. (previously presented) The method of claim 18 wherein said step of selecting a flow control device includes generating a list of available flow control devices based on

said system outputs and selecting said flow control device from said list of available flow control devices.

22. (cancelled)

23. (previously presented) The method of claim 43 wherein said refrigerant properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

24. (previously presented) The method of claim 43 further comprising inputting tubing and line heat transfer parameters, wherein said system outputs are further based on said tubing and line heat transfer parameters.

25. (previously presented) The method of claim 43 further comprising inputting accumulator parameters, wherein said system outputs are further based on said accumulator parameters.

26. (cancelled)

27. (previously presented) The method of claim 49 wherein said step of calculating said air properties includes generating an air properties table based on said dry bulb temperature.

28. (previously presented) The method of claim 49 wherein said step of calculating said air properties includes generating an air properties graph based on said dry bulb temperature.

29. (previously presented) The method of claim 49 further comprising selecting a flow control device based on output.

30. (previously presented) The method of claim 29 wherein said flow control device includes one of a capillary tube device and an orifice device.

31. (previously presented) The method of claim 29 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

32. (previously presented) The method of claim 29 wherein said step of selecting a flow control device includes generating a list of available flow control devices based on said output and selecting said flow control device from said list of available flow control devices.

33. (previously presented) The method of claim 49 further comprising inputting properties for a refrigerant flowing through said cooling system, wherein said output is further based on said refrigerant properties.

34. (previously presented) The method of claim 33 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

35. (previously presented) The method of claim 49 wherein said step of inputting condenser parameters includes generating a list of available condensers, selecting a condenser from said list of available condensers and automatically inputting said condenser parameters based on said selected condenser.

36. (previously presented) The method of claim 49 wherein said step of inputting compressor parameters includes generating a list of available compressors based on search parameters, selecting a compressor from said list of available compressors and automatically inputting said compressor parameters based on said selected compressor.

37. (previously presented) The method of claim 36 wherein said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity.

38. (previously presented) The method of claim 37 wherein said search parameters include a capacity and a capacity tolerance.

39. (previously presented) The method of claim 49 further comprising inputting tubing and line heat transfer parameters, wherein said output is further based on said tubing and line heat transfer parameters.

40. (previously presented) The method of claim 49 further comprising inputting accumulator parameters, wherein said output is further based on said accumulator parameters.

41. (previously presented) The method of claim 49 wherein said condenser parameters and said compressor parameters are input as air-cooled condensing unit parameters.

42. (previously presented) The method of claim 41 further comprising generating a list of available air-cooled condensing units, selecting an air-cooled condensing unit from said list of available air-cooled condensing units and automatically inputting said air-cooled condensing unit parameters based on said selected air-cooled condensing unit.

43. (previously presented) A method of computer-based simulation of a cooling system, comprising:

inputting condensing unit parameters and evaporator parameters for said cooling system, at least one of said condensing unit parameters and said evaporator

parameters including configuration information for a heat exchanger of said cooling system;

inputting compressor parameters for said cooling system;

inputting refrigerant properties for a refrigerant flowing through said cooling system;

processing said condensing unit parameters, said evaporator parameters, said compressor parameters and said refrigerant properties through a model of said cooling system; and

generating system outputs based on said processing.

44. (previously presented) The method of claim 43 wherein said configuration information includes tube geometry information of said heat exchanger.

45. (previously presented) The method of claim 44 wherein said tube geometry information includes at least one of: number of rows information, horizontal tube spacing information, vertical tube spacing information, number of return bends information, outside diameter of tubing information, inside diameter of tubing information, and tubing type information.

46. (previously presented) The method of claim 43 wherein said configuration information includes at least one of frontal area information and number of equivalent parallel refrigerant circuits information.

47. (previously presented) The method of claim 43 wherein said configuration information includes fin geometry information of said heat exchanger.

48. (previously presented) The method of claim 47 wherein said fin geometry information includes at least one of fin density information and fin type information.

49. (previously presented) A method of computer-based simulation of a cooling system, comprising:

inputting condenser parameters and evaporator parameters for said cooling system, at least one of said condenser parameters and said evaporator parameters including configuration information for a heat exchanger of said cooling system;

inputting compressor parameters for said cooling system;

calculating air properties based on a dry bulb temperature;

automatically inputting said air properties into a model of said cooling system;

processing said condenser parameters, said evaporator parameters and said compressor parameters through said model; and

generating an output based on said processing.

50. (previously presented) The method of claim 49 wherein said configuration information includes tube geometry information of said heat exchanger.

51. (previously presented) The method of claim 50 wherein said tube geometry information includes at least one of: number of rows information, horizontal tube spacing

information, vertical tube spacing information, number of return bends information, outside diameter of tubing information, inside diameter of tubing information, and tubing type information.

52. (previously presented) The method of claim 49 wherein said configuration information includes at least one of frontal area information and number of equivalent parallel refrigerant circuits information.

53. (previously presented) The method of claim 49 wherein said configuration information includes fin geometry information of said heat exchanger.

54. (previously presented) The method of claim 53 wherein said fin geometry information includes at least one of fin density information and fin type information.

55. (New) The method of claim 43 wherein said configuration information includes a number of equivalent parallel refrigerant circuits information.

56. (New) The method of claim 49 wherein said configuration information includes a number of equivalent parallel refrigerant circuits information.